

In the Claims:

1. (Currently Amended) An acetabular reamer for surgical use, the reamer comprising:
 - (a) a substantially hemispherical, hollow dome extending from an apex to a lower edge and defining an equatorial plane; and an apex, and
 - (b) a reamer spindle an interface structure comprising at least one cross-bar fixedly attached to the inside of the dome at intermediate locations between the equatorial plane and the apex so that as to completely and substantially inset the interface structure is positioned inwardly from the edge and within the dome in order to help minimize the size of an assembly of the reamer and a reamer spindle when performing joint surgery.
2. (Cancelled)
3. (Currently Amended) The acetabular reamer of claim 1, wherein the dome has at least one substantial section removed so as to reduce a static insertion profile of the reamer, as compared to a dynamic profile, in order to facilitate surgery which is relatively less invasive than a surgery performed with a comparable reamer not having the removed sections.
4. (Currently Amended) The acetabular reamer of claim 1, wherein a plurality of sections of the dome are removed so as to reduce a static insertion profile of the reamer in order to permit surgery which is still relatively less invasive than a surgery performed with a comparable reamer not having the removed sections.

5. (Currently Amended) The acetabular reamer of claim 4, wherein the removed sections are equally spaced about the equator of the dome.

6. (Cancelled)

7. (Currently Amended) The acetabular reamer of claim 1, wherein the cross-bar interface structure is fixedly attached to the inside of the dome in regions substantially along the a latitudinal plane of the interface structure.

8. (Currently Amended) The acetabular reamer of claim 3, wherein the removed section removed from the dome renders the dome asymmetrical.

9. (Cancelled)

10. (Currently Amended) The acetabular reamer of claim 1, wherein the interface structure comprises at least two, equally spaced apart cross bars in the form of an cross with the bars having their respective ends fixedly attached to the inside of the dome spaced 90° from each other at locations between the equatorial plane and the apex.

11. (Currently Amended) The acetabular reamer of claim 1 wherein the interface structure is fixedly attached to the inside of the dome by a single cross bar comprising the interface structure has having a central centering boss.

12. (Cancelled)

13. (Currently Amended) A surgical reamer assembly, comprised of:

- (a) a hemispherical, hollow dome extending from an apex to a lower edge defining an equatorial plane;
- (b) an interface structure comprising at least one cross-bar fixedly attached to the inside of the dome at intermediate locations between the equatorial plane and the apex so that the interface structure is positioned inwardly from the edge and within the dome; the hollow reamer of claim 1, having a substantially inset interface structure, and
- (c) (b) an angled reamer spindle having a coupling, wherein the reamer and the spindle are detachably attachable to each other attached together via the inset interface structure and the coupling, the assembly providing for comparably minimum invasiveness of orthopedic surgery.

14. (New) An acetabular reamer for surgical use, the reamer comprising:

- (a) a hemispherical, hollow dome extending from an apex to a lower edge defining an equatorial plane; and
- (b) an interface structure comprising a shaft having a proximal end secured to an inner surface of the dome at the apex and extending to a distal end supporting at least two radial spokes extending therefrom in a radial spokes plane within the dome.

15. (New) The acetabular reamer of claim 14 wherein the interface structure comprises four radial spokes extending from the distal end of the shaft along the radial spoke plane.

16. (New) The acetabular reamer of claim 15 wherein the four radial spokes are disposed at 90° with respect to each other.

17. (New) The acetabular reamer of claim 14 wherein the radial spokes plane is parallel to the equatorial plane so that the interface structure is completely within the dome.

18. (New) The acetabular reamer of claim 14 wherein the dome has at least one substantial section removed so as to reduce a static insertion profile of the reamer, as compared to a dynamic profile, in order to facilitate surgery which is relatively less invasive than a surgery performed with a comparable reamer not having the removed section.

19. (New) The acetabular reamer of claim 14 wherein a plurality of sections of the dome are removed so as to reduce a static insertion profile of the reamer in order to permit surgery which is relatively less invasive than a surgery performed with a comparable reamer not having the removed sections.

20. (New) The acetabular reamer of claim 18 wherein the removed sections are equally spaced about the equator of the dome.

21. (New) The acetabular reamer of claim 18 wherein the section renders the dome asymmetrical.

22. (New) A surgical reamer assembly, which comprises:

- (a) a hemispherical, hollow dome extending from an apex to a lower edge defining an equatorial plane;
- (b) an interface structure comprising a shaft having a proximal end secured to an inner surface of the dome at the apex and extending to a distal end supporting at least two radial spokes extending therefrom in a radial spokes plane parallel to the equatorial plane so that

the interface structure is completely within the dome;
and

- (c) an angled reamer spindle having a coupling, wherein the reamer and the spindle are detachably attachable to each other via the inset interface structure and the coupling, the assembly providing for comparably minimum invasiveness of orthopedic surgery.